# EXHIBIT B

#### EXPERT REPORT OF JOHN R. ALFORD, Ph.D.

# **Scope of Inquiry**

I have been retained by Lewisville Independent School District as an expert to provide analysis related to *Vaughan v. Lewisville Independent School District*, a challenge to their current at-large election system. I have examined the plaintiff's expert reports of Mr. Ely and Dr. Mayer provided in this case. My rate of compensation as a testifying expert is \$300 per hour.

# **Qualifications**

I am a tenured full professor of political science at Rice University. In my over thirty years at Rice I have taught courses on redistricting, elections, political representation, voting behavior and statistical methods at both the undergraduate and graduate level. Over the last thirty years, I have worked with numerous local governments on districting plans and on Voting Rights Act issues. I have previously provided expert reports and/or testified as an expert witness in voting rights and statistical issues in a variety of court cases, working for the U.S. Attorney in Houston, the Texas Attorney General, a U.S. Congressman and various cities and school districts.

In the 2000 round of redistricting, I was retained as an expert to provide advice to the Texas Attorney General in his role as Chair of the Legislative Redistricting Board. I subsequently served as the expert for the State of Texas in the state and federal litigation involving the 2001 redistricting for U.S. Congress, the Texas Senate, the Texas House of Representatives, and the Texas State Board of Education.

In the 2010 round of redistricting in Texas, I was again retained as an expert by the State

of Texas to assist in defending various state election maps and systems including the district maps for the U.S. Congress, the Texas Senate, the Texas House of Representatives, and the current at large system for electing Justices to the State Supreme Court and Court of Appeals, as well as the winner-take-all system for allocating Electoral College votes.

I have also worked as an expert on redistricting and voting rights cases at the state and/or local level in Michigan, Washington, Louisiana, New Mexico, Mississippi, Wisconsin, Florida, New York, Georgia, and Alabama. The details of my academic background, including all publications in the last ten years, and work as an expert, including all cases in which I have testified by deposition or at trial in the last four years, are included in my curriculum vitae, which is attached to this declaration as Exhibit 1.

#### **Data and Sources**

In preparing my report, I have reviewed the reports filed by the plaintiff's experts Dr. Mayer and Mr. Ely in this case. I have relied on precinct level data, including election results, and registered voter data provided by Dr. Mayer and Mr. Ely in response to a request for the data that they relied on to produce their expert reports in this case. I have also relied on election data publicly available from Denton County, and demographic data publicly available from the US Census.

#### **Gingles** Two and Three Methods

My analysis, like that of Dr. Mayer, focuses primarily on the empirical issues related to the assessment of racially polarized voting. This assessment begins with a focus on the second and third of the so-called 'Gingles' factors. Gingles 2 is concerned with the degree to which minority voters are politically cohesive, and Gingles 3 is in turn concerned with the degree to

which majority voters are politically cohesive in their opposition to those candidates that have been shown to be the cohesive choice of minority voters. Moving beyond the threshold *Gingles* tests, these voting patterns of minority and majority voters are then considered more broadly to assess the degree to which they reflect racially polarized voting.

Two techniques commonly used in Voting Rights Act lawsuits to assess voter cohesion and polarization—Ecological Regression (ER) and Ecological Inference (EI)—are described below. The analysis reported here, relies on the more recent technique of Ecological Inference, but a discussion of the logic underlying the older Ecological Regression approach is helpful to appreciate how both techniques attack the problem of inferring individual behavior from ecological (grouped) voting data.

Ecological Regression analysis is the original statistical estimation technique used in VRA lawsuits to assess voter cohesion and polarization. In a nutshell, regression is a mathematical technique for estimating the single best-fitting straight line that could be drawn to describe the relationship between two variables in a scatter plot. Ecological regression (also called Goodman's regression) is distinct from simple regression in that it relies on a data set made up of precinct level aggregations of voters and election results, rather than a data set of individual voter characteristics and vote choices. This is necessary for the sort of analysis we wish to do here because, while we have election results for groups of voters at the polling-place level and can also estimate the demographic characteristics for the geography of the precinct, we do not have access to the actual vote choice of individual voters.

Applied to voting rights cases, the logic of regression analysis is to determine to what degree, if any, the vote for a candidate increases in a linear fashion as the concentration of voters of a given ethnicity in the precincts increases. This is done by finding the equation for

the line that best fits the scatterplot of precinct-level demographics (e.g., percent Hispanic in a precinct) and precinct-level support for a given candidate. This best-fitting line is called the "regression line" and can be described by two numbers: a slope coefficient and an intercept. The estimate of the slope tells us how much the support of the candidate rises or falls when the precincts have more people from the relevant demographic group (e.g., a greater percentage of Hispanics). The intercept tells us the predicted level of support for the candidate when the percentage of the relevant demographic group in a precinct is equal to zero (or in this case the predicted share of the vote for the Hispanic candidate when the percentage of actual voters with Spanish surnames in a precinct is zero). Regression is one way to estimate these two parameters that, if the statistical assumptions behind the method hold, has been shown to use the information in the data optimally. By using the estimates of the slope and the intercept produced by the regression we can compute an estimate of the percentage of the vote received by the Hispanic candidate when the percentage of voters with Spanish surnames equals 100. This estimate is then an estimate of Hispanic voting cohesion for the candidate. Similar procedures can be used to assess non-Hispanic voting cohesion.

Gary King's Ecological Inference (EI) procedure differs from Ecological Regression by recognizing that the statistical assumptions underlying regression analysis do not hold when one has aggregate data rather than individual data (as we do here). Specifically, the assumptions underlying the regression technique do not recognize that the data are bounded—that is, no more than 100% and no less than 0% of Hispanics can vote for a given candidate. Regression can sometimes lead to unsatisfying conclusions, e.g., a model that predicts -10% of Hispanics will support a candidate. More importantly, the regression technique does not utilize the information that is inherent in these bounds. For example, if we know that a precinct has

100 voters, of which 98 are Hispanic and 99 people voted for the Hispanic candidate, then we know with complete certainty that at least 97 of the Hispanic voters voted for the Hispanic candidate and, at most, 98 did. Ecological Regression fails to utilize this deterministic information and so does not use the available data optimally.

Ecological Inference methods incorporate this information about the bounds for each precinct into a statistical analysis that also allows the relationship between the size of the demographic group and support for a candidate to be non-linear (another assumption imposed by older methods that is unlikely to hold in practice). While the details are mathematically complex, the bottom line is that Ecological Inference techniques use the available data in a more efficient way and so provide estimates of the relationship between the size of demographic groups and candidate support that are potentially less biased and more certain than previous methods. In addition to these point estimates, the analysis also provides confidence intervals for the point estimates. In his report in this case, Dr. Mayer provides results only for Ecological Inference. As such, I have also relied on Ecological Inference analysis in my report.

# **Election Analysis**

In the replication analysis reported below, I have relied on the data provided by the plaintiffs as that relied upon by Dr. Mayer in producing his election Ecological Inference estimates. There were numerous issues with achieving a precise match between the data sets and the reported estimation scripts, as well as issues in the data itself in terms of occasional mismatches between the number of voters and the number of votes cast. At this point, most of these issue have been resolved satisfactorily for the endogenous Lewisville ISD Board

elections discussed below, and the replication results very closely match the estimates reported by Dr. Mayer for those elections. I am still working on the replication of the exogenous elections, including working through a packet of over one hundred files provided in the last week. As such, I will rely for my discussion of the exogenous elections below on the Ecological Inference estimates provided in Dr. Mayer's report, but will supplement my report when I am able to provide a complete replication for the exogenous elections.

#### - Endogenous Elections

In his report, Dr. Mayer notes that precinct level election data is available for Lewisville ISD election for the Board elections from 2014 forward. During that time, there have been four Trustee elections that included a minority candidate (a Black candidate, Mary Smith, ran in both 2014 and 2015, an Asian candidate, Fairooz Adams, ran in 2016, and a Hispanic candidate, David Hernandez, ran in 2018). Thus, we have a recent board election suitable for analysis for each of the racial/ethnic groups that together constitute the plaintiffs' minority coalition. Where minority candidates have been featured in recent contested elections, endogenous elections are the most probative elections and are often the only elections analyzed in these cases. As Dr. Mayer notes, "these 'endogenous races' are informative in that they involve the same electoral context – office, turnout, geography, timing, candidate incentives, etc. - that we seek to understand in estimating the voting behavior of different racial and ethnic groups" (page 13). I agree with Dr. Mayer that these Lewisville Board elections are the best evidence we have for assessing *Gingles* prong two and three in this case. Moreover, given that they also include a candidate from each of the distinct racial/ethnic groups in the plaintiff's coalition, I believe they are sufficient on their own to establishing whether these groups are voting as a single cohesive minority at levels that satisfy the *Gingles* prong two threshold test. I will discuss each of these racial/ethnically contested elections in turn, beginning with the most recent 2018 contest and moving backward to 2014.

#### **2018 Place 2**

The 2018 Board Place 2 contest included David Hernandez, a Hispanic candidate, and two non-Hispanic white candidates, Denise Riemenschneider and Allison Lassahn. Dr. Mayer reports the results of his Ecological Inference estimates for this election in his Table 8 on page 14. Those estimates, along with my replication estimates, are provided below in Table 1. In this table (and in the two tables that follow), Dr. Mayer's estimates are provided above my replication estimates for each cell in the table. Because the replication estimates are so similar in every instance to those reported by Dr. Mayer in his report, I will proceed with my discussion throughout this section by relying on the estimates provided by Dr. Mayer. This is intended to make it clear that nothing in my discussion depends in any way on the minor distinctions between our estimates.

Table 1: Ecological Inference Estimates for the 2018 LISD Place 2 Board Election

May 2018 LISD Place 2							
Candidate		Latino	Black	Asian	White		
Hernandez	Vote % (Mayer)	54.0%	69.8%	37.8%	26.8%		
	Vote % (Alford)	52.5%	63.8%	35.2%	27.4%		
Riemenschneider	Vote % (Mayer)	23.3%	14.2%	30.0%	26.3%		
	Vote % (Alford)	25.1%	19.8%	31.5%	25.7%		
Lassahn (winner)	Vote % (Mayer)	22.7%	15.9%	32.0%	46.9%		
	Vote % (Alford)	22.4%	16.4%	33.3%	46.9%		

Black voters exhibited moderate cohesion in support of Mr. Hernandez, giving him an estimated 70 percent of their votes. The same cannot be said for the remaining minority voters. Hispanic voters are almost evenly split in the support, giving Hernandez 54 percent while giving the two non-Hispanic white candidates a combined estimated 46 percent of their votes. The fact that his estimated vote share among Hispanic voters is barely over 50 percent, and well below the 70 percent level of Black support for Hernandez, indicates that Hispanic voters were not politically cohesive in this election contest. The pattern for Asian voters most closely resembles that for non-Hispanic white voters. Asian voters gave an estimated 62 percent of their votes to one of the two non-Hispanic white candidates, and only 38 percent of their votes to Hernandez. In this election, the empirical evidence does not show that the three distinct minority groups are behaving as a single cohesive groups in their support of the minority candidate in this election. Blacks are moderately cohesive, but the Hispanic vote is almost evenly divided between the minority candidate and the two majority candidates. Asian voters most closely resemble non-Hispanic white voters, giving almost two-thirds of their votes to the non-minority candidates.

#### **2016 Place 4**

The 2016 Board Place 4 contest included Fairooz Adams, an Asian candidate, and one non-Hispanic white candidate, Katherine Sells. Dr. Mayer reports the results of his Ecological Inference estimates for this election in his Table 10 on page 15. Those estimates, along with my replication estimates, are provided below in Table 2 with Dr. Mayer's estimates above my replication estimates for each cell in the table. As indicated above for Table 1, I will proceed

with my discussion by relying on the estimates provided by Dr. Mayer to make it clear that nothing in my discussion depends in any way on the minor distinctions between our estimates.

Table 2: Ecological Inference Estimates for the 2016 LISD Place 4 Board Election

May 2016 LISD Place 4							
Candidate		Latino	Black	Asian	White		
Adams	Vote % (Mayer)	46.7%	42.2%	57.4%	17.4%		
	Vote % (Alford)	47.8%	44.2%	51.4%	17.3%		
Sells (winner)	Vote % (Mayer)	53.3%	57.8%	42.6%	82.6%		
	Vote % (Alford)	52.2%	55.8%	46.8%	82.7%		

As we can see, Asian voters exhibited a modest preference for Adams, giving him an estimated 57 percent of their votes. The same cannot be said for the remaining minority voters. Hispanic voters gave 53 percent of their votes to Sells, while giving the minority candidate, Adams, 47 percent of their votes. Thus, as was the case in the 2018 election discussed above, Hispanic voters were not cohesive, splitting their vote almost evenly again, albeit here slightly in favor of the non-minority candidate. Black voters gave Adams even less support at an estimated 42 percent, while giving the non-minority candidate 58 percent of their votes. Non-Hispanic white voters gave Ms. Sells an estimated 83 percent of their votes. In this election, the empirical evidence does not show that Black, Hispanic, and Asian voters are behaving as a single cohesive group in their support of the minority candidate in this election. Asian voters show a modest preference for the Asian candidate, but with more than 40 percent of Asian voters crossing over to support Sells, this is not particularly cohesive behavior. Black and Hispanic voters do not even join Asian voters in this modest level of support for the Asian candidate, as both instead give a majority of their votes to the non-Hispanic white candidate in this contest.

#### **2014 Place 6**

The 2014 Board Place 6 contest included a Black candidate, Mary Smith, and two non-Hispanic white candidates, Kristi Hassett and Krista Stone. Dr. Mayer reports the results of his Ecological Inference estimates for this election in his Table 12 on page 16. Those estimates, along with my replication estimates, are provided below in Table 3, with Dr. Mayer's estimates above my replication estimates for each cell in the table. As indicated above for Tables 1 and 2, I will proceed with my by relying on the estimates provided by Dr. Mayer to make it clear that nothing in my discussion depends in any way of the minor distinct between our estimates.

Table 3: Ecological Inference Estimates for the 2014 LISD Place 6 Board Election

May 2014 LISD Place 6							
Candidate		Latino	Black	Asian	White		
Smith	Vote % (Mayer)	30.2%	38.7%	29.5%	15.0%		
	Vote % (Alford)	30.8%	37.0%	31.2%	15.2%		
Hassett (winner)	Vote % (Mayer)	34.1%	23.9%	36.2%	51.7%		
	Vote % (Alford)	33.7%	24.8%	35.6%	51.7%		
Stone	Vote % (Mayer)	35.6%	37.4%	34.3%	33.3%		
	Vote % (Alford)	35.5%	38.2%	33.2%	33.1%		

As we can see, Hispanic, Black, Asian and Non-Hispanic white voters all gave a majority of their votes to the two non-Hispanic white candidates in this election. Black voters provided the most support to Smith, at 39 percent, but this was well below majority support. This estimate of 39 percent support for Smith is also only slightly above the estimate of 37 percent support for Stone, a difference too small to reach statistical significance. Relatedly,

my estimates, reported below Dr. Mayer's estimates, suggest that Stone was preferred by a slight margin of 38 percent to 37 percent, but again, as is true for Dr. Mayer's estimates, this difference is too small to be statistically significant. Smith, the Black candidate, finished last among Hispanic voters with 30 percent of their vote, compared to 34 percent for Hassett and 36 percent for Stone. The same was true for Asian voters, where Smith, the Black candidate, finished last among Asian voters with just under 30 percent of their vote, compared to 36 percent for Hassett and 34 percent for Stone. Combined, the two non-Hispanic white candidates received an estimated 61 percent of the Black votes, 70 percent of the Hispanic votes, 70 percent of the Asian votes and 85 percent of the non-Hispanic white votes. The Black candidate was not even the preferred candidate of Asians or Hispanics, and we can't even say with statistical confidence that she was the preferred candidate of Black voters. This is clearly not racially polarized voting in this 2015 Lewisville ISD Board contest despite the presence of a Black candidate.

# **2015 Place 1**

The 2015 Board Place 1 contest again included a Black candidate, the same Mary Smith who ran in the 2014 Place 6 contest discussed above, and two non-Hispanic white candidates, Kronda Thimesch and Kathy Duke. Dr. Mayer did not provide any EI estimates of voter behavior in this election. As he notes in footnote 8 of his report on page 13 "I did not include the 2015 LISD Place 2 election, because the minority candidate (Mary Smith) received only 11.9% of the vote in a 3-way race. A candidate with such a small percentage of vote is unlikely to be the choice of any voter group." I would agree with Dr. Mayer's assumption, particularly in light of the fact that Smith received 18 percent of the vote in 2014, and despite

that substantial better overall performance, was not the choice of any voter group in that election. Again, as was the case for Smith's 2014 contest discussed above, the conclusion that both Dr. Mayer and I reach about Smith's 2015 contest does not suggest any evidence of racially polarized voting.

#### **Summary of Endogenous Election Findings**

Combining discrete racial and ethnic groups for purposes of meeting the *Gingles* one threshold test creates the necessity of demonstrating that the distinct groups form a single cohesive political group in order to meet the *Gingles* two threshold test. In this case, none of the three racial/ethnic groups alone meets the first *Gingles* threshold. Even taking any two of the three groups together, no two combined groups meet the first Gingles threshold. Only by combining all three groups does the demonstration district provided by Mr. Ely reach a CVAP majority for combined minority residents. Even with all three groups combined, the putative district is only modestly majority minority (at 55 percent), and the district is also substantially under-sized. Clear voter cohesion on the part of all three groups is essential in such a situation.

The voting analysis provided by Dr. Mayer provides recent endogenous elections that feature a candidate from each of the three minority groups that the plaintiffs seek to combine. As such, these elections are, as Dr. Mayer agrees, the best suited to answer the questions we have about the voting behavior for the election structure at issue in this case. If Hispanic, Black and Asian voters were politically cohesive in Lewisville ISD elections, we would see all three groups giving cohesive support to the minority candidate in these elections. In fact, we do not see all three groups giving even majority support to any minority candidate in *any* of

these elections. In 2018, Hernandez, the minority candidate, garners moderately cohesive support from Black voters, but gets only a slight majority of Hispanic votes and falls well below majority support among Asian voters. In 2016 Adams, the minority candidate, manages a slight majority among Asian voters, but both Hispanic and Asian voters provide majority support for his non-Hispanic white opponent. In 2014, and presumable in 2015 as well, Smith, the minority candidate, does not receive a majority of the votes from any voter group, and in 2014 is in fact the *least* preferred candidate among Hispanic and Asian voters.

#### - Exogenous Elections

Exogenous elections are of limited utility here, as the available recent endogenous elections provide at least one racially or ethnically contested election with a candidate form each of the three distinct minority groups. Moreover, as discussed above, the lack of joint cohesion across the three groups is clear in these endogenous elections. Despite this, Dr. Mayer provides Ecological Inference analysis for five exogenous contests. He acknowledges that these are 'selected' contests, but provides no indication of how they were selected or what the larger set of elections were that he selected them from.

When selecting exogenous elections to use in a case where the elections at hand are local, low salience, non-partisan elections, the selection of which exogenous elections to analyze can be particularly important. While other local, non-partisan elections may offer useful insight into the behavior of school district voters in school board elections, partisan elections, particularly those for statewide or national offices, are typically highly distinct in terms of the nature of the candidates, the nature of the campaigns, and the pool of actual voters that take part in the elections. Moreover, the key feature of these elections, in terms of the

behavior of voters, is the fact that they are partisan contests with party labels on the ballot. This creates substantial difficulty in assessing how patterns evident in such an exogenous election might provide any insight at all into the behavior of voters in the local, non-partisan, school board contests at issue. Despite the importance of choosing exogenous elections that are as similar as possible to the endogenous elections at hand, Dr. Mayer chose five partisan elections, two general and three Democratic primary elections, that are very distinct from the Lewisville ISD Board elections, and as such are the least useful for understanding local voter behavior, except perhaps in contrast.

None of the five exogenous elections the Dr. Mayer selected are local non-partisan elections. Instead, all are partisan, top-of-the-ballot, statewide or national offices. In addition, in all five election contests the minority candidate is also a Democrats. Dr. Mayer begins with the 2018 Democratic gubernatorial primary runoff election and then follows with the 2018 gubernatorial general election that included Valdez, a Hispanic Democrat. He follows this with the 2018 Senate Democratic primary, an election that included two minority Democratic candidates, but chose not to analyze the 2018 Senate general election that followed in which there was a minority Republican candidate – Ted Cruz. Instead, he veers off to the 2012 Presidential general election, and the 2008 Democratic presidential primary, both featuring the same minority Democratic candidate – Barack Obama.

The distinctive role of partisan cues in partisan general elections can be clearly seen in the estimated voter behavior in these two elections. In both the 2018 contest for Texas Governor and the 2012 contest for US President, the majority of Black, Hispanic, and Asian voters supported the Democratic candidate at about 70 percent, while non-Hispanic white voters supported the Republican candidate at about the same level. Importantly, there is no

indication that this pattern depends in any way on the race or ethnicity of the candidates. The same broad pattern is evident throughout Texas in partisan elections regardless, of whether one of the nominees is a minority or not. Indeed, the 2018 Senate contest shows the same pattern of minority support for the Democrat (O'Rourke) and non-Hispanic white support for the Republican (Cruz) despite the fact that in that contest it is the Republican that is the minority candidate.

In addition, it is notable that this pattern of all three minority groups providing clear support for the same candidate, while non-Hispanic whites provide cohesive support for the opposite candidate, while present in the partisan contests, it is not present in any of the endogenous Board contests - nor is it present in the exogenous Democratic primaries. The closest primary in terms of this pattern is the 2018 gubernatorial runoff, but the Asian and Hispanic preference for Valdez is below 60 percent and the non-Hispanic white support for White is only 52 percent. Dr. Mayer provides no estimates for the March primary that preceded that runoff. He does provide estimates for the 2018 March Democratic primary for another office – US Senator. In that contest, the Hispanic candidate, Hernandez, is the first choice of Hispanic voters at 44 percent. The white candidate, O'Rourke, is the first choice of Black voters at 49 percent, and the white candidate, O'Rourke, is also the first choice of Asian voters at 40 percent. Even if we combine the two minority candidates, this leaves O'Rourke as the majority choice of Asian voters. In the remaining 2008 Democratic primary, the Black candidate, Obama, is the majority choice of Black, Asian and non-Hispanic white voters at 65, 58, and 55 percent respectively, but the white candidate, Clinton, is the majority choice of Hispanic voters at 58 percent.

In short, in none of the one-party exogenous Democratic primary contests do all three minority groups vote cohesively for the same candidate. This is the same pattern that the non-partisan endogenous Board elections exhibit.

#### **Other Analysis**

As Dr. Mayer notes on page 24 of his report Senate Factor 5 addresses "the extent to which members of the minority group in the state or political subdivision bear the effects of discrimination in such areas as education, employment and health, which hinder their ability to participate effectively in the political process." Dr. Mayer, in his Table 26, provides various data points from the 2013-2017 ACS study to support his assertion that this is the case in the Lewisville ISD. Dr. Mayer's discussion misses two key points. The data he provides clearly shows that the three racial/ethnic minority groups here do share a similar educational or income disadvantage. Asians are more similar to non-Hispanic whites and Blacks than they are to Hispanics, despite sharing almost equally high levels of limited English proficiency. Overall, the levels of income and of educational attainment in Lewisville ISD, even for the three minority groups, are relatively high. For Texas as a whole, the proportion of households with an annual income over \$100,000 is 26.0 percent, a level similar to that for Hispanic households in Lewisville ISD, and exceeded by both Black and Asian households, and by Dr. Mayer's non-white category. The Texas proportion for VAP poverty status is 13.5 percent compared to only 8.5 percent in Lewisville ISD for non-whites in the table. The Texas proportion with a bachelor's degree or higher is 28.7 percent, while for the non-white category for Lewisville ISD in Dr. Mayer's table the proportion is fully 41.2 percent. Clearly this is an area with a relatively well off and relatively educated population in general. The fact that the minority population falls at or above the state average in these measures suggests that these levels are not so low in the absolute sense as to hinder their ability to participate effectively in the political process, at least relative to Texas in general.

#### **Summary Conclusions**

The central question here is whether the two distinct racial groups, Blacks and Asians, can be combined with a third, largely white, racial group that is ethnically Hispanic, for the purposes of challenging the legality of the at-large election system used to elect Board members in the Lewisville ISD. The election analysis provided here, and in Dr. Mayer's report, seeks to answer that question. It is crucial here that all three groups form a single highly cohesive minority voting bloc, as in the *Gingles* one putative district provided by Mr. Ely the minority CVAP exceeds 50 percent only with all three groups combined, and even then only narrowly and in an under-sized district.

Dr. Mayer discusses four recent endogenous Lewisville ISD Board contests that feature a minority candidate running against at least one non-Hispanic white candidate. In 2014 and 2015, this was a Black candidate. According to Dr. Mayer's analysis and discussion, the Black candidate may have been the plurality choice of Black voters in 2014, but was not was not the choice of Hispanic or Asian voters in either election. In 2016, the minority candidate was an Asian. The election analysis suggests he was the majority choice of Asian voters, but both Black and Hispanic voters gave the majority of their votes to the non-Hispanic white candidate. In the 2018 election, the minority candidate was Hispanic. The estimates indicate that he received a majority of the votes of Hispanics and Blacks, but was supported by less than 40 percent of Asian voters.

In short, there is not a single instance in which all three minority groups give a majority of their votes to the minority candidate in a Lewisville ISD Board election. In fact, the 2018 contest is the only example of a minority candidate getting majority support from either of the other two groups of minority voters. This lack of cohesive voting behavior leads to the conclusion that the single-member district provided by the plaintiff's expert will not prove effective. Dr. Mayer demonstrates as much in his Table 25 on page 22 of his report.

He offers a simulated version of an election within the geography of Mr. Ely's demonstration district. For this simulation, he does not use voter cohesion estimates from one of the Lewisville ISD Board elections, but instead uses cohesion estimates from the exogenous partisan 2018 gubernatorial election featuring a Hispanic Democrat, Valdez, against a non-Hispanic white Republican, Abbott. That allows him to set Hispanic cohesion at 75.1 percent, a level far above the highest level of Hispanic cohesion found in any of the ISD elections (54.0 percent in 2018 for Hernandez). It also allows him to set the Black cohesion at 81.2 percent, a level well above the highest level of Black cohesion found in any of the ISD elections (69.8 percent in 2018 for Hernandez). Likewise, it also allows him to set the Asian cohesion at 70.7 percent, a level well above the highest level of Asian cohesion found in any of the ISD elections (57.4 percent in 2016 for the Asian candidate Adams, and even farther above the level of Asian support for the 2018 Hispanic Board candidate Hernandez at 26.8 percent).

In spite of setting cohesion for each of these distinct groups levels only achieved in voting for a Democratic candidate in a November statewide election, the result was still that the non-Hispanic candidate Abbott would be elected with 55.5 percent of the vote in the demonstration district, a level only slightly below the 59.1 percent that Abbott received in the

entire Lewisville ISD geography.<sup>1</sup> Taken together there is nothing here to support the claim that Hispanic, Black and Asian voters in the Lewisville ISD form a single political group that provides cohesive support to Hispanic, Black and Asian candidates.

September 17, 2019.

John R. Alford, Ph.D.

<sup>&</sup>lt;sup>1</sup> Dr. Mayer notes that this is "a significantly better showing for a minority candidate than the district-wide 33.2% that David Hernandez received in the 2018 Board of Trustees election" (page 22), but that is hardly a surprise given that Hernandez only received 54.0 percent of the Hispanic vote and 37.8 percent of the Asian vote.

# Exhibit 1

# John R. Alford

Curriculum Vitae September, 2019

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# **Employment:**

Full Professor, Rice University, 2015 to present.
Associate Professor, Rice University, 1985-2015.
Assistant Professor, University of Georgia, 1981-1985.
Instructor, Oakland University, 1980-1981.
Teaching-Research Fellow, University of Iowa, 1977-1980.
Research Associate, Institute for Urban Studies, Houston, Texas, 1976-1977.

#### Education:

Ph.D., University of Iowa, Political Science, 1981. M.A., University of Iowa, Political Science, 1980. M.P.A., University of Houston, Public Administration, 1977. B.S., University of Houston, Political Science, 1975.

#### **Books:**

Predisposed: Liberals, Conservatives, and the Biology of Political Differences. New York: Routledge, 2013. Co-authors, John R. Hibbing and Kevin B. Smith.

#### **Articles:**

"Intuitive ethics and political orientations: Testing moral foundations as a theory of political ideology." with Kevin Smith, John Hibbing, Nicholas Martin, and Peter Hatemi. **American Journal of Political Science**. (April, 2017).

"The Genetic and Environmental Foundations of Political, Psychological, Social, and Economic Behaviors: A Panel Study of Twins and Families." with Peter Hatemi, Kevin Smith, and John Hibbing. **Twin Research and Human Genetics**. (May, 2015.)

"Liberals and conservatives: Non-convertible currencies." with John R. Hibbing and Kevin B. Smith. **Behavioral and Brain Sciences** (January, 2015).

"Non-Political Images Evoke Neural Predictors Of Political Ideology." with Woo-Young Ahn, Kenneth T. Kishida, Xiaosi Gu, Terry Lohrenz, Ann Harvey, Kevin Smith, Gideon Yaffe, John Hibbing, Peter Dayan, P. Read Montague. **Current Biology**. (November, 2014).

"Cortisol and Politics: Variance in Voting Behavior is Predicted by Baseline Cortisol Levels." with Jeffrey French, Kevin Smith, Adam Guck, Andrew Birnie, and John Hibbing. **Physiology & Behavior**. (June, 2014).

"Differences in Negativity Bias Underlie Variations in Political Ideology." with Kevin B. Smith and John R. Hibbing. **Behavioral and Brain Sciences**. (June, 2014).

"Negativity bias and political preferences: A response to commentators Response." with Kevin B. Smith and John R. Hibbing. **Behavioral and Brain Sciences**. (June, 2014).

"Genetic and Environmental Transmission of Political Orientations." with Carolyn L. Funk, Matthew Hibbing, Kevin B. Smith, Nicholas R. Eaton, Robert F. Krueger, Lindon J. Eaves, John R. Hibbing. **Political Psychology**, (December, 2013).

"Biology, Ideology, and Epistemology: How Do We Know Political Attitudes Are Inherited and Why Should We Care?" with Kevin Smith, Peter K. Hatemi, Lindon J. Eaves, Carolyn Funk, and John R. Hibbing. **American Journal of Political Science**. (January, 2012)

"Disgust Sensitivity and the Neurophysiology of Left-Right Political Orientations." with Kevin Smith, John Hibbing, Douglas Oxley, and Matthew Hibbing, **PlosONE**, (October, 2011).

"Linking Genetics and Political Attitudes: Re-Conceptualizing Political Ideology." with Kevin Smith, John Hibbing, Douglas Oxley, and Matthew Hibbing, Political Psychology, (June, 2011).

"The Politics of Mate Choice." with Peter Hatemi, John R. Hibbing, Nicholas Martin and Lindon Eaves, **Journal of Politics**, (March, 2011).

"Not by Twins Alone: Using the Extended Twin Family Design to Investigate the Genetic Basis of Political Beliefs" with Peter Hatemi, John Hibbing, Sarah Medland, Matthew Keller, Kevin Smith, Nicholas Martin, and Lindon Eaves, American Journal of Political Science, (July, 2010).

"The Ultimate Source of Political Opinions: Genes and the Environment" with John R. Hibbing in **Understanding Public Opinion**, 3rd Edition eds. Barbara Norrander and Clyde Wilcox, Washington D.C.: CQ Press, (2010).

"Is There a 'Party' in your Genes" with Peter Hatemi, John R. Hibbing, Nicholas Martin and Lindon Eaves, **Political Research Quarterly**, (September, 2009).

"Twin Studies, Molecular Genetics, Politics, and Tolerance: A Response to Beckwith and Morris" with John R. Hibbing and Cary Funk, **Perspectives on Politics**, (December, 2008). This is a solicited response to a critique of our 2005 APSR article "Are Political Orientations Genetically Transmitted?"

"Political Attitudes Vary with Physiological Traits" with Douglas R. Oxley, Kevin B. Smith, Matthew V. Hibbing, Jennifer L. Miller, Mario Scalora, Peter K. Hatemi, and John R. Hibbing, **Science**, (September 19, 2008).

"The New Empirical Biopolitics" with John R. Hibbing, Annual Review of Political Science, (June, 2008).

"Beyond Liberals and Conservatives to Political Genotypes and Phenotypes" with John R. Hibbing and Cary Funk, **Perspectives on Politics**, (June, 2008). This is a solicited response to a critique of our 2005 APSR article "Are Political Orientations Genetically Transmitted?"

"Personal, Interpersonal, and Political Temperaments" with John R. Hibbing, Annals of the American Academy of Political and Social Science, (November, 2007).

"Is Politics in our Genes?" with John R. Hibbing, Tidsskriftet Politik, (February, 2007).

"Biology and Rational Choice" with John R. Hibbing, The Political Economist, (Fall, 2005)

"Are Political Orientations Genetically Transmitted?" with John R. Hibbing and Carolyn Funk, **American Political Science Review**, (May, 2005). (The main findings table from this article has been reprinted in two college level text books - Psychology, 9th ed. and Invitation to Psychology 4th ed. both by Wade and Tavris, Prentice Hall, 2007).

"The Origin of Politics: An Evolutionary Theory of Political Behavior" with John R. Hibbing, **Perspectives on Politics**, (December, 2004).

"Accepting Authoritative Decisions: Humans as Wary Cooperators" with John R. Hibbing, American Journal of Political Science, (January, 2004).

"Electoral Convergence of the Two Houses of Congress" with John R. Hibbing, in **The Exceptional Senate**, ed. Bruce Oppenheimer, Columbus: Ohio State University Press, (2002).

"We're All in this Together: The Decline of Trust in Government, 1958-1996." in **What is it About Government that Americans Dislike?**, eds. John Hibbing and Beth Theiss-Morse, Cambridge: Cambridge University Press, (2001).

"The 2000 Census and the New Redistricting," **Texas State Bar Association School Law Section Newsletter**, (July, 2000).

"Overdraft: The Political Cost of Congressional Malfeasance" with Holly Teeters, Dan Ward, and Rick Wilson, **Journal of Politics** (August, 1994).

"Personal and Partisan Advantage in U.S. Congressional Elections, 1846-1990" with David W. Brady, in **Congress Reconsidered** 5th edition, eds. Larry Dodd and Bruce Oppenheimer, CQ Press, (1993).

"The 1990 Congressional Election Results and the Fallacy that They Embodied an Anti-Incumbent Mood" with John R. Hibbing, **PS** 25 (June, 1992).

"Constituency Population and Representation in the United States Senate" with John R. Hibbing. Legislative Studies Quarterly, (November, 1990).

"Editors' Introduction: Electing the U.S. Senate" with Bruce I. Oppenheimer. Legislative Studies Quarterly, (November, 1990).

"Personal and Partisan Advantage in U.S. Congressional Elections, 1846-1990" with David W. Brady, in **Congress Reconsidered** 4th edition, eds. Larry Dodd and Bruce Oppenheimer, CQ Press, (1988). Reprinted in The Congress of the United States, 1789-1989, ed. Joel Silby, Carlson Publishing Inc., (1991), and in The Quest for Office, eds. Wayne and Wilcox, St. Martins Press, (1991).

"Can Government Regulate Fertility? An Assessment of Pro-natalist Policy in Eastern Europe" with Jerome Legge. **The Western Political Quarterly** (December, 1986).

"Partisanship and Voting" with James Campbell, Mary Munro, and Bruce Campbell, in **Research in Micropolitics. Volume 1 - Voting Behavior**. Samuel Long, ed. JAI Press, (1986).

"Economic Conditions and Individual Vote in the Federal Republic of Germany" with Jerome S. Legge. **Journal of Politics** (November, 1984).

"Television Markets and Congressional Elections" with James Campbell and Keith Henry. **Legislative Studies Quarterly** (November, 1984).

"Economic Conditions and the Forgotten Side of Congress: A Foray into U.S. Senate Elections" with John R. Hibbing, **British Journal of Political Science** (October, 1982).

"Increased Incumbency Advantage in the House" with John R. Hibbing, **Journal of Politics** (November, 1981). Reprinted in The Congress of the United States, 1789-1989, Carlson Publishing Inc., (1991).

"The Electoral Impact of Economic Conditions: Who is Held Responsible?" with John R. Hibbing, American Journal of Political Science (August, 1981).

"Comment on Increased Incumbency Advantage" with John R. Hibbing, Refereed communication: American Political Science Review (March, 1981).

"Can Government Regulate Safety? The Coal Mine Example" with Michael Lewis-Beck, **American Political Science Review** (September, 1980).

#### Awards and Honors:

CQ Press Award - 1988, honoring the outstanding paper in legislative politics presented at the 1987 Annual Meeting of the American Political Science Association. Awarded for "The Demise of the Upper House and the Rise of the Senate: Electoral Responsiveness in the United States Senate" with John Hibbing.

#### **Research Grants:**

National Science Foundation, 2009-2011, "Identifying the Biological Influences on Political Temperaments", with John Hibbing, Kevin Smith, Kim Espy, Nicolas Martin and Read Montague. This is a collaborative project involving Rice, University of Nebraska, Baylor College of Medicine, and Queensland Institute for Medical Research.

National Science Foundation, 2007-2010, "Genes and Politics: Providing the Necessary Data", with John Hibbing, Kevin Smith, and Lindon Eaves. This is a collaborative project involving Rice, University of Nebraska, Virginia Commonwealth University, and the University of Minnesota.

National Science Foundation, 2007-2010, "Investigating the Genetic Basis of Economic Behavior", with John Hibbing and Kevin Smith. This is a collaborative project involving Rice, University of Nebraska, Virginia Commonwealth University, and the Queensland Institute of Medical Research.

Rice University Faculty Initiatives Fund, 2007-2009, "The Biological Substrates of Political Behavior". This is in assistance of a collaborative project involving Rice, Baylor College of Medicine, Queensland Institute of Medical Research, University of Nebraska, Virginia Commonwealth University, and the University of Minnesota.

National Science Foundation, 2004-2006, "Decision-Making on Behalf of Others", with John Hibbing. This is a collaborative project involving Rice and the University of Nebraska.

National Science Foundation, 2001-2002, dissertation grant for Kevin Arceneaux, "Doctoral Dissertation Research in Political Science: Voting Behavior in the Context of U.S. Federalism."

National Science Foundation, 2000-2001, dissertation grant for Stacy Ulbig, "Doctoral Dissertation Research in Political Science: Sub-national Contextual Influences on Political Trust."

National Science Foundation, 1999-2000, dissertation grant for Richard Engstrom, "Doctoral Dissertation Research in Political Science: Electoral District Structure and Political Behavior."

Rice University Research Grant, 1985, Recent Trends in British Parliamentary Elections.

Faculty Research Grants Program, University of Georgia, Summer, 1982. Impact of Media Structure on Congressional Elections, with James Campbell.

# Papers Presented:

"The Physiological Basis of Political Temperaments" 6th European Consortium for Political Research General Conference, Reykjavik, Iceland (2011), with Kevin Smith, and John Hibbing.

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"Identifying the Biological Influences on Political Temperaments" National Science Foundation Annual Human Social Dynamics Meeting (2010), with John Hibbing, Kimberly Espy, Nicholas Martin, Read Montague, and Kevin B. Smith.

"Political Orientations May Be Related to Detection of the Odor of Androstenone" Annual meeting of the Midwest Political Science Association, Chicago, IL (2010), with Kevin Smith, Amanda Balzer, Michael Gruszczynski, Carly M. Jacobs, and John Hibbing.

"Toward a Modern View of Political Man: Genetic and Environmental Transmission of Political Orientations from Attitude Intensity to Political Participation" Annual meeting of the American Political Science Association, Washington, DC (2010), with Carolyn Funk, Kevin Smith, and John Hibbing.

"Genetic and Environmental Transmission of Political Involvement from Attitude Intensity to Political Participation" Annual meeting of the International Society for Political Psychology, San Francisco, CA (2010), with Carolyn Funk, Kevin Smith, and John Hibbing.

"Are Violations of the EEA Relevant to Political Attitudes and Behaviors?" Annual meeting of the Midwest Political Science Association, Chicago, IL (2010), with Kevin Smith, and John Hibbing.

"The Neural Basis of Representation" Annual meeting of the American Political Science Association, Toronto, Canada (2009), with John Hibbing.

"Genetic and Environmental Transmission of Value Orientations" Annual meeting of the American Political Science Association, Toronto, Canada (2009), with Carolyn Funk, Kevin Smith, Matthew Hibbing, Pete Hatemi, Robert Krueger, Lindon Eaves, and John Hibbing.

"The Genetic Heritability of Political Orientations: A New Twin Study of Political Attitudes" Annual Meeting of the International Society for Political Psychology, Dublin, Ireland (2009), with John Hibbing, Cary Funk, Kevin Smith, and Peter K Hatemi.

"The Heritability of Value Orientations" Annual meeting of the Behavior Genetics Association, Minneapolis, MN (2009), with Kevin Smith, John Hibbing, Carolyn Funk, Robert Krueger, Peter Hatemi, and Lindon Eaves.

"The Ick Factor: Disgust Sensitivity as a Predictor of Political Attitudes" Annual meeting of the Midwest Political Science Association, Chicago, IL (2009), with Kevin Smith, Douglas Oxley Matthew Hibbing, and John Hibbing.

"The Ideological Animal: The Origins and Implications of Ideology" Annual meeting of the American Political Science Association, Boston, MA (2008), with Kevin Smith, Matthew Hibbing, Douglas Oxley, and John Hibbing.

"The Physiological Differences of Liberals and Conservatives" Annual meeting of the Midwest Political Science Association, Chicago, IL (2008), with Kevin Smith, Douglas Oxley, and John Hibbing.

"Looking for Political Genes: The Influence of Serotonin on Political and Social Values" Annual meeting of the Midwest Political Science Association, Chicago, IL (2008), with Peter Hatemi, Sarah Medland, John Hibbing, and Nicholas Martin.

"Not by Twins Alone: Using the Extended Twin Family Design to Investigate the Genetic Basis of Political Beliefs" Annual meeting of the American Political Science Association, Chicago, IL (2007), with Peter Hatemi, John Hibbing, Matthew Keller, Nicholas Martin, Sarah Medland, and Lindon Eaves.

"Factorial Association: A generalization of the Fulker between-within model to the multivariate case" Annual meeting of the Behavior Genetics Association, Amsterdam, The Netherlands (2007), with Sarah Medland, Peter Hatemi, John Hibbing, William Coventry, Nicholas Martin, and Michael Neale.

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"Not by Twins Alone: Using the Extended Twin Family Design to Investigate the Genetic Basis of Political Beliefs" Annual meeting of the Midwest Political Science Association, Chicago, IL (2007), with Peter Hatemi, John Hibbing, Nicholas Martin, and Lindon Eaves.

"Getting from Genes to Politics: The Connecting Role of Emotion-Reading Capability" Annual Meeting of the International Society for Political Psychology, Portland, OR, (2007.), with John Hibbing.

"The Neurological Basis of Representative Democracy." Hendricks Conference on Political Behavior, Lincoln, NE (2006), with John Hibbing.

"The Neural Basis of Representative Democracy" Annual meeting of the American Political Science Association, Philadelphia, PA (2006), with John Hibbing.

"How are Political Orientations Genetically Transmitted? A Research Agenda" Annual meeting of the Midwest Political Science Association, Chicago Illinois (2006), with John Hibbing.

"The Politics of Mate Choice" Annual meeting of the Southern Political Science Association, Atlanta, GA (2006), with John Hibbing.

"The Challenge Evolutionary Biology Poses for Rational Choice" Annual meeting of the American Political Science Association, Washington, DC (2005), with John Hibbing and Kevin Smith.

"Decision Making on Behalf of Others" Annual meeting of the American Political Science Association, Washington, DC (2005), with John Hibbing.

"The Source of Political Attitudes and Behavior: Assessing Genetic and Environmental Contributions" Annual meeting of the Midwest Political Science Association, Chicago Illinois (2005), with John Hibbing and Carolyn Funk.

"The Source of Political Attitudes and Behavior: Assessing Genetic and Environmental Contributions" Annual meeting of the American Political Science Association, Chicago Illinois (2004), with John Hibbing and Carolyn Funk.

"Accepting Authoritative Decisions: Humans as Wary Cooperators" Annual Meeting of the Midwest Political Science Association, Chicago, Illinois (2002), with John Hibbing

"Can We Trust the NES Trust Measure?" Annual Meeting of the Midwest Political Science Association, Chicago, Illinois (2001), with Stacy Ulbig.

"The Impact of Organizational Structure on the Production of Social Capital Among Group Members" Annual Meeting of the Southern Political Science Association, Atlanta, Georgia (2000), with Allison Rinden.

"Isolating the Origins of Incumbency Advantage: An Analysis of House Primaries, 1956-1998" Annual Meeting of the Southern Political Science Association, Atlanta, Georgia (2000), with Kevin Arceneaux.

"The Electorally Indistinct Senate," Norman Thomas Conference on Senate Exceptionalism, Vanderbilt University; Nashville, Tennessee; October (1999), with John R. Hibbing.

"Interest Group Participation and Social Capital" Annual Meeting of the Midwest Political Science Association, Chicago, Illinois (1999), with Allison Rinden.

"We're All in this Together: The Decline of Trust in Government, 1958-1996." The Hendricks Symposium, University of Nebraska, Lincoln. (1998)

"Constituency Population and Representation in the United States Senate," Electing the Senate; Houston, Texas; December (1989), with John R. Hibbing.

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"The Disparate Electoral Security of House and Senate Incumbents," American Political Science Association Annual Meetings; Atlanta, Georgia; September (1989), with John R. Hibbing.

"Partisan and Incumbent Advantage in House Elections," Annual Meeting of the Southern Political Science Association (1987), with David W. Brady.

"Personal and Party Advantage in U.S. House Elections, 1846-1986" with David W. Brady, 1987 Social Science History Association Meetings.

"The Demise of the Upper House and the Rise of the Senate: Electoral Responsiveness in the United States Senate" with John Hibbing, 1987 Annual Meeting of the American Political Science Association.

"A Comparative Analysis of Economic Voting" with Jerome Legge, 1985 Annual Meeting of the American Political Science Association.

"An Analysis of Economic Conditions and the Individual Vote in Great Britain, 1964-1979" with Jerome Legge, 1985 Annual Meeting of the Western Political Science Association.

"Can Government Regulate Fertility? An Assessment of Pro-natalist Policy in Eastern Europe" with Jerome Legge, 1985 Annual Meeting of the Southwestern Social Science Association.

"Economic Conditions and the Individual Vote in the Federal Republic of Germany" with Jerome S. Legge, 1984 Annual Meeting of the Southern Political Science Association.

"The Conditions Required for Economic Issue Voting" with John R. Hibbing, 1984 Annual Meeting of the Midwest Political Science Association.

"Incumbency Advantage in Senate Elections," 1983 Annual Meeting of the Midwest Political Science Association.

"Television Markets and Congressional Elections: The Impact of Market/District Congruence" with James Campbell and Keith Henry, 1982 Annual Meeting of the Southern Political Science Association.

"Economic Conditions and Senate Elections" with John R. Hibbing, 1982 Annual Meeting of the Midwest Political Science Association. "Pocketbook Voting: Economic Conditions and Individual Level Voting," 1982 Annual Meeting of the American Political Science Association.

"Increased Incumbency Advantage in the House," with John R. Hibbing, 1981 Annual Meeting of the Midwest Political Science Association.

# Other Conference Participation:

Roundtable Participant – Closing Round-table on Biopolitics; 2016 UC Merced Conference on Bio-Politics and Political Psychology, Merced, CA.

Roundtable Participant "Genes, Brains, and Core Political Orientations" 2008 Annual Meeting of the Southwestern Political Science Association, Las Vegas.

Roundtable Participant "Politics in the Laboratory" 2007 Annual Meeting of the Southern Political Science Association, New Orleans.

Short Course Lecturer, "What Neuroscience has to Offer Political Science" 2006 Annual Meeting of the American Political Science Association.

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Panel chair and discussant, "Neuro-scientific Advances in the Study of Political Science" 2006 Annual Meeting of the American Political Science Association.

Presentation, "The Twin Study Approach to Assessing Genetic Influences on Political Behavior" Rice Conference on New Methods for Understanding Political Behavior, 2005.

Panel discussant, "The Political Consequences of Redistricting," 2002 Annual Meeting of the American Political Science Association.

Panel discussant, "Race and Redistricting," 1999 Annual Meeting of the Midwest Political Science Association.

Invited participant, "Roundtable on Public Dissatisfaction with American Political Institutions", 1998 Annual Meeting of the Southwestern Social Science Association.

Presentation, "Redistricting in the '90s," Texas Economic and Demographic Association, 1997.

Panel chair, "Congressional Elections," 1992 Annual Meeting of the Southern Political Science Association.

Panel discussant, "Incumbency and Congressional Elections," 1992 Annual Meeting of the American Political Science Association.

Panel chair, "Issues in Legislative Elections," 1991 Annual Meeting of the Midwest Political Science Association.

Panel chair, "Economic Attitudes and Public Policy in Europe," 1990 Annual Meeting of the Southern Political Science Association

Panel discussant, "Retrospective Voting in U.S. Elections," 1990 Annual Meeting of the Midwest Political Science Association.

Co-convener, with Bruce Oppenheimer, of Electing the Senate, a national conference on the NES 1988 Senate Election Study. Funded by the Rice Institute for Policy Analysis, the University of Houston Center for Public Policy, and the National Science Foundation, Houston, Texas, December, 1989.

Invited participant, Understanding Congress: A Bicentennial Research Conference, Washington, D.C., February, 1989.

Invited participant--Hendricks Symposium on the United States Senate, University of Nebraska, Lincoln, Nebraska, October, 1988

Invited participant--Conference on the History of Congress, Stanford University, Stanford, California, June, 1988.

Invited participant, "Roundtable on Partisan Realignment in the 1980's", 1987 Annual Meeting of the Southern Political Science Association.

#### **Professional Activities:**

#### Other Universities:

Invited Speaker, Annual Lecture, Psi Kappa -the Psychology Club at Houston Community College, 2018.

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Invited Speaker, Annual Allman Family Lecture, Dedman College Interdisciplinary Institute, Southern Methodist University, 2016.

Invited Speaker, Annual Lecture, Psi Sigma Alpha – Political Science Dept., Oklahoma State University, 2015.

Invited Lecturer, Department of Political Science, Vanderbilt University, 2014.

Invited Speaker, Annual Lecture, Psi Kappa -the Psychology Club at Houston Community College, 2014.

Invited Speaker, Graduate Student Colloquium, Department of Political Science, University of New Mexico, 2013.

Invited Keynote Speaker, Political Science Alumni Evening, University of Houston, 2013.

Invited Lecturer, Biology and Politics Masters Seminar (John Geer and David Bader), Department of Political Science and Biology Department, Vanderbilt University, 2010.

Invited Lecturer, Biology and Politics Senior Seminar (John Geer and David Bader), Department of Political Science and Biology Department, Vanderbilt University, 2008.

Visiting Fellow, the Hoover Institution, Stanford University, 2007.

Invited Speaker, Joint Political Psychology Graduate Seminar, University of Minnesota, 2007.

Invited Speaker, Department of Political Science, Vanderbilt University, 2006.

#### Member:

Editorial Board, Journal of Politics, 2007-2008.

Planning Committee for the National Election Studies' Senate Election Study, 1990-92.

Nominations Committee, Social Science History Association, 1988

#### Reviewer for:

American Journal of Political Science American Political Science Review American Politics Research American Politics Quarterly American Psychologist American Sociological Review Canadian Journal of Political Science Comparative Politics **Electoral Studies** Evolution and Human Behavior International Studies Quarterly Journal of Politics Journal of Urban Affairs Legislative Studies Quarterly National Science Foundation PLoS ONE Policy Studies Review

Political Behavior
Political Communication
Political Psychology
Political Research Quarterly
Public Opinion Quarterly
Science
Security Studies
Social Forces
Social Science Quarterly
Western Political Quarterly

# **University Service:**

Member, University Parking Committee, 2016-2018.

Member, University Benefits Committee, 2013-2016.

Internship Director for the Department of Political Science, 2004-2018.

Member, University Council, 2012-2013.

Invited Speaker, Rice Classroom Connect, 2016.

Invited Speaker, Glasscock School, 2016.

Invited Speaker, Rice Alumni Association, Austin, 2016.

Invited Speaker, Rice Alumni Association, New York City, 2016.

Invited Speaker, Rice TEDxRiceU, 2013.

Invited Speaker, Rice Alumni Association, Atlanta, 2011.

Lecturer, Advanced Topics in AP Psychology, Rice University AP Summer Institute, 2009.

Scientia Lecture Series: "Politics in Our Genes: The Biology of Ideology" 2008

Invited Speaker, Rice Alumni Association, Seattle, San Francisco and Los Angeles, 2008.

Invited Speaker, Rice Alumni Association, Austin, Chicago and Washington, DC, 2006.

Invited Speaker, Rice Alumni Association, Dallas and New York, 2005.

Director: Rice University Behavioral Research Lab and Social Science Computing Lab, 2005-2006.

University Official Representative to the Inter-university Consortium for Political and Social Research, 1989-2012.

Director: Rice University Social Science Computing Lab, 1989-2004.

Member, Rice University Information Technology Access and Security Committee, 2001-2002

Rice University Committee on Computers, Member, 1988-1992, 1995-1996; Chair, 1996-1998, Co-chair, 1999.

Acting Chairman, Rice Institute for Policy Analysis, 1991-1992.

Divisional Member of the John W. Gardner Dissertation Award Selection Committee, 1998

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Social Science Representative to the Educational Sub-committee of the Computer Planning Committee, 1989-1990.

Director of Graduate Admissions, Department of Political Science, Rice University, 1986-1988.

Co-director, Mellon Workshop: Southern Politics, May, 1988.

Guest Lecturer, Mellon Workshop: The U.S. Congress in Historical Perspective, May, 1987 and 1988.

Faculty Associate, Hanszen College, Rice University, 1987-1990.

Director, Political Data Analysis Center, University of Georgia, 1982-1985.

# External Witness/Consultant (last ten years):

Expert Witness, Vaughan v. Lewisville ISD, TX, racially polarized voting analysis, 2018.

Expert Witness, Kumar et al. v. Frisco ISD, TX, racially polarized voting analysis, 2019.

Expert Witness, Alabama NAACP et al. v. City of Pleasant Grove, AL, racially polarized voting analysis, 2019.

Expert Witness, Flores et al. v. Town of Islip, NY, racially polarized voting analysis, 2018.

Expert Witness, Tyson v. Richardson ISD, racially polarized voting analysis, 2018.

Expert Witness, Dwight v. State of Georgia, racially polarized voting analysis, 2018.

Expert Witness, NAACP v. East Ramapo Central School District, racially polarized voting analysis, 2018.

Expert Witness, Georgia NAACP v. State of Georgia, racially polarized voting analysis, 2018.

Expert Witness, Arismendez v. Coastal Bend College, racially polarized voting analysis, 2017.

Expert Witness, United States v. City of Eastpoint, racially polarized voting analysis, 2017.

Expert Witness, Georgia NAACP v. Gwinnett County, racially polarized voting analysis, 2017.

Expert Witness for the State of Texas, Lopez, et al v. Abbott, a challenge to the current system of statewide at-large elections for the Texas Supreme Court and the Texas Court of Criminal Appeals, including election analysis, and racially polarized voting analysis, 2017.

Expert witness for the State of Texas, Perez, et al v State of Texas (and consolidated cases), challenge to adopted Texas election districts for the US Congress and the Texas House of Representatives, 2011-2017.

Expert Witness for Coppell ISD, Jain v. Coppell ISD, racially polarized voting analysis, 2016.

Consultant, City of Clute, Texas – Demographic analysis and redrawing of election districts, 2015.

Expert Witness for Carrollton-Farmers Branch ISD, Ramos v. Carrollton-Farmers Branch ISD, racially polarized voting analysis, 2015.

Expert Witness for Coahoma County, Columbus Partee, et al. v. Coahoma County, Mississippi, racially polarized voting analysis, 2015.

Expert Witness for the State of Lousianna, Terrebonne Parish NAACP v. Jindal, racially polarized voting analysis, 2015.

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Expert Witness for the City of Pasadena, Patino v. City of Pasadena, racially polarized voting analysis, 2015.

Expert Witness for the City of St. Gabriel, York v. City of St. Gabriel, racially polarized voting analysis, 2014.

Consultant, Houston ISD – Incorporation of North Forest ISD, and the consequent redrawing of all nine board member election districts including demographic analysis, board and public hearing presentations and support for pre-clearance submission, 2014.

Expert Witness for Grand Prairie ISD, Rodriguez v. Grand Prairie ISD, racially polarized voting analysis, 2014.

Expert Witness for Irving ISD, Benevides, v Irving ISD, racially polarized voting analysis, 2014.

Expert Witness for Pasadena ISD, Garcia-Sonnier et al v., racially polarized voting analysis, 2013.

Expert witness for the City of Yakima, Montes v. City of Yakima, challenge to Yakima, Washington At-Large City Council Elections, 2012.

Consultant, Lamar ISD – redrawing of all board member election districts including demographic analysis and redrawing of election districts, board and public hearing presentations, and support for pre-clearance submission, 2012.

Expert witness for Harris Co, Rodriguez, et. al. v., challenge to adopted Harris County Commissioners' Court precincts, 2011.

Consultant, City of Baytown – redrawing of all board member election districts including demographic analysis and redrawing of election districts, board and public hearing presentations, and support for preclearance submission, 2011.

Consultant, Goose Creek ISD – redrawing of all board member election districts including demographic analysis and redrawing of election districts, board and public hearing presentations, and support for preclearance submission, 2011.

Consultant, San Antonio Water System – Analysis of preclearance issues related to merger with BexarMet Water Authority, 2011.

Expert witness for the State of Texas, Texas v US, preclearance suit for Texas statewide districts, 2011.\*

Expert witness for the State of Texas, Davis v Perry (and consolidated cases), challenge to adopted Texas Senate districts, 2011.

Expert witness for the State of Texas, Perez, et al v State of Texas (and consolidated cases), challenge to adopted Texas statewide districts, 2011-2017.

Expert witness, Fabela, et al. v City of Farmers Branch, Farmers Branch city council at large district challenge, 2011.

Expert Witness, El Paso Apartment Owners Assoc. v City of El Paso, analysis of racial patterns in housing occupancy, 2009.

Expert Witness, Benevides, v Irving ISD, racially polarized voting analysis, 2008-2009.

Expert Witness, Benevides, v City of Irving, racially polarized voting analysis, 2008-2009.